Designing Network-Friendly Applications

Session 630

These are confidential sessions—please refrain from filming or taking pictures.

Enterprise IT

Designing Network-Friendly Applications

Jussi-Pekka Mantere
Engineering Manager, Managed Client X and Portable Home Directories
Desktop Management Solutions

http://developer.apple.com/wwdc2005/

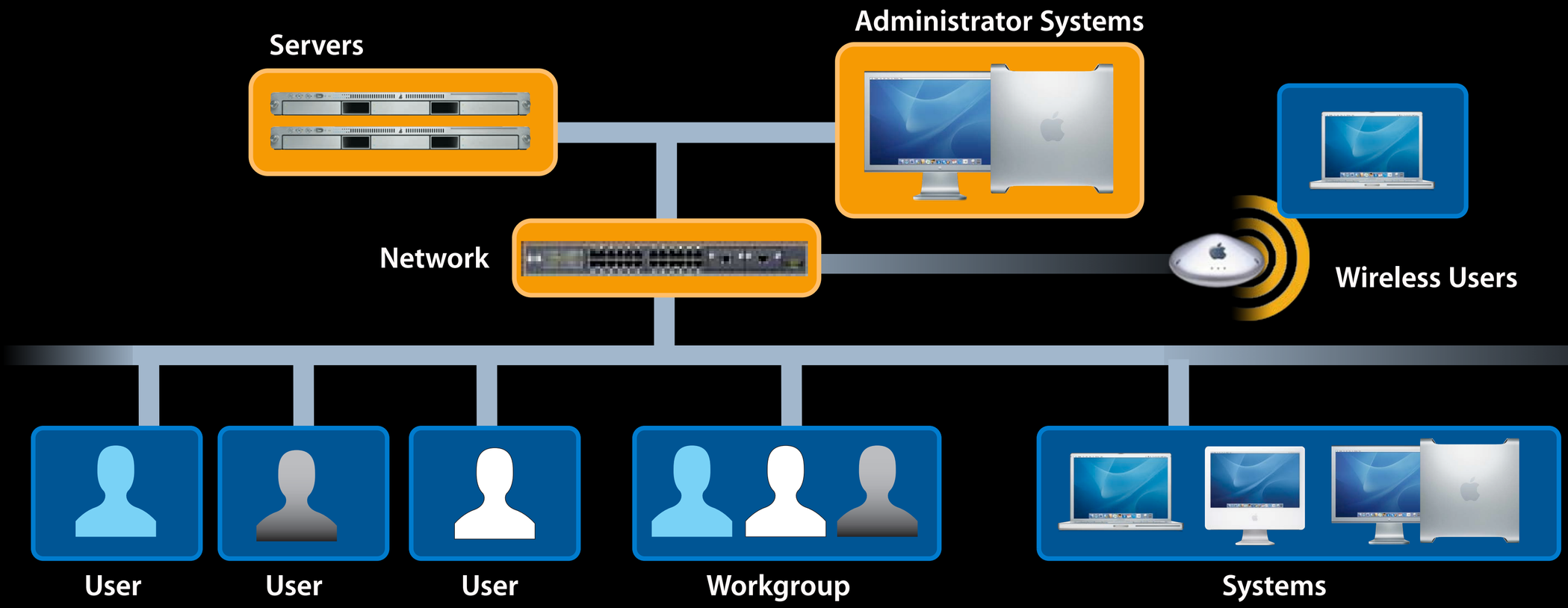
Agenda

- Best practices for good behavior
  - In a network environment
  - In a managed environment
- Portable Home Directories
- Managed Client X in Tiger
  - Preference Manifests

Overview

Typical Network Deployment

- Network accounts, home directories, managed accounts, mobile accounts
- Managed systems
- Roaming users, portables, wireless



Considerations

- Network home directory vs. local home directory
  - Not your typical feature on Windows
- Managed vs. unmanaged users and systems
  - DHCP bound—managed network settings for DNS, LDAP
  - Apple Remote Desktop—system management
  - Managed Client X—client management
    - Parental Controls
- Network account vs. mobile account vs. local account
  - Mobile account: locally cached network credentials
  - Modify local NetInfo user record? Network settings overwrite standard attributes

Best Practices

File System

- Optimize for performance
  - Minimize disk access
    - Benefits network use, portable use
  - Use Shark, fs_usage, sc_usage to profile
- Use system disk for temporary files, caches
  - FSFindFolder
    - kOnSystemDisk
    - kTemporaryFolderType, kChewableItemsFolderType
- ~/Library/Caches
  - Private, user-unique vs. system only
- Security concerns

Best Practices

Preferences

- Rule of thumb
  - CFPreferencesCopyAppValue()
  - NSUserDefaults -objectForKey:
- Avoid CFPreferencesCopyValue() unless explicitly required
- Reflect management state in user interface
  - CFPreferencesAppValueIsForced()
  - NSUserDefaults -objectIsForcedForKey:
- Inherit user interface from Cocoa classes
  - NSUserDefaultsController

Applications Behaving Badly

- Excessive file system access
  - Don’t copy application support files into user’s home directory
  - /Library/Application Support !
- Creating network shared resources
  - Support managed settings for preferences

Portable Home Directories

- Panther: Mobile Accounts
- Tiger: Mobile Accounts with Portable Home Directories
- Local copy of network account with local copy of network home directory
  - Managed preferences and workgroup settings cached
- Created
  - By the user
    - Requires local administrator privileges
  - Through Workgroup Manager
- Beware of hardcoded paths
  - User’s home directory path will change from /Network to /Users

Demo

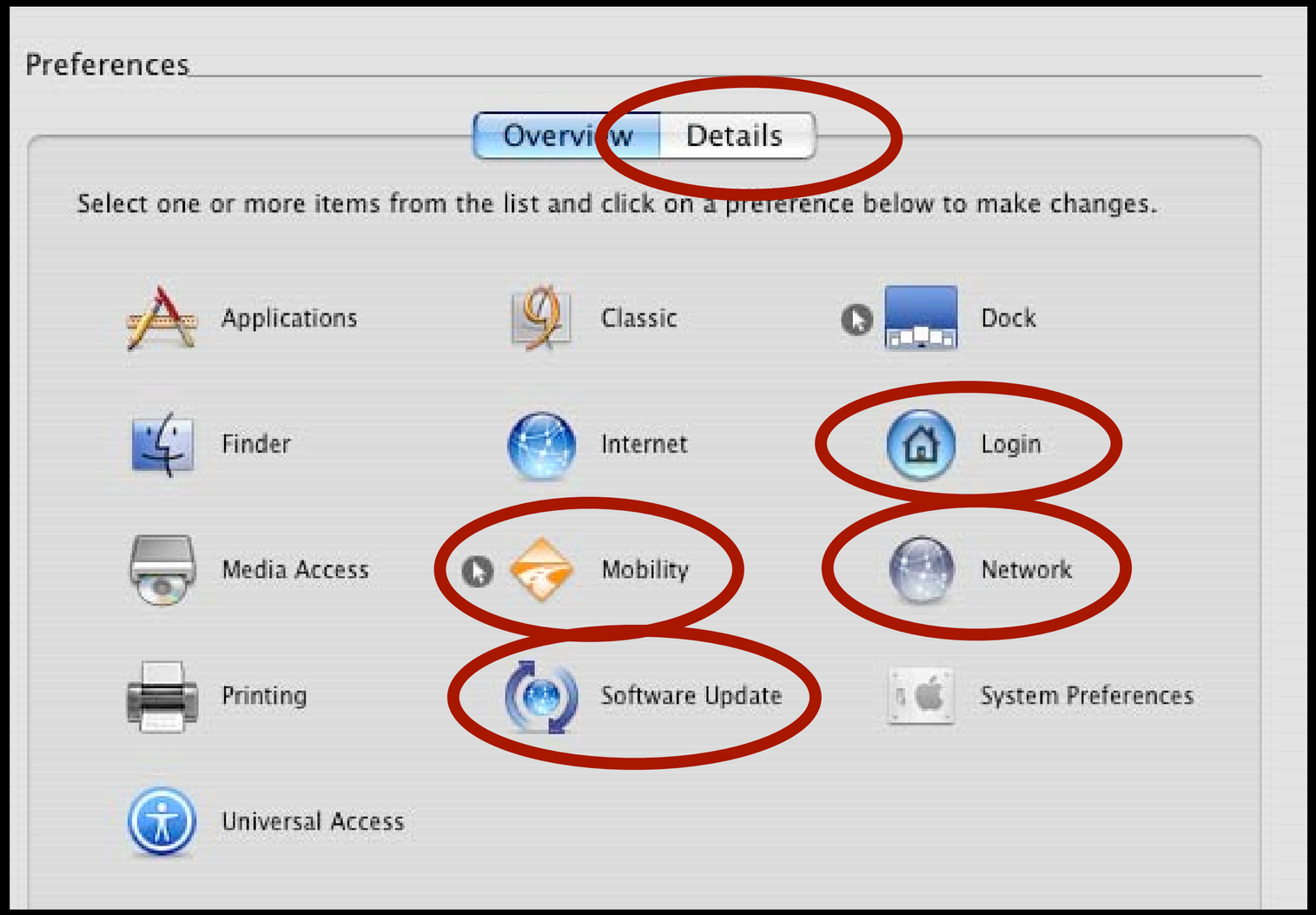
Bruce Gaya
Engineering Lead, Managed Client X and Portable Home Directories

http://developer.apple.com/wwdc2005/

Managed Client X

New in Tiger

- Mobility
  - Portable Home Directories
- Software Update
- Proxy settings
- Login scripts
- Login window message
- Details
  - Once, Often, Always
- Preference Manifests

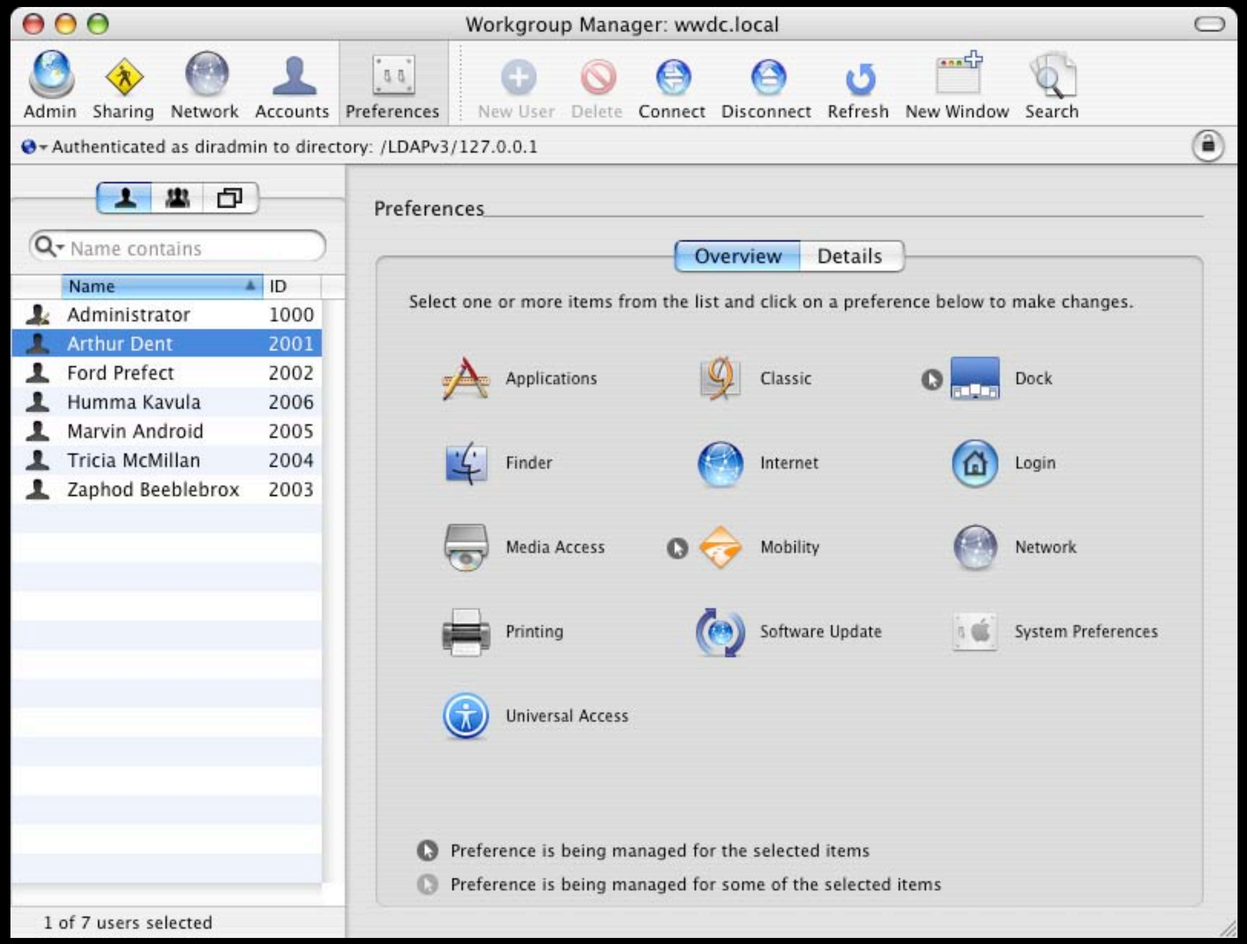


Preference Manifests

- Allows applications to declare their manageable settings or preferences
  - Custom defaults
  - Enable/disable functionality
- Enables administrators to control settings via Workgroup Manager

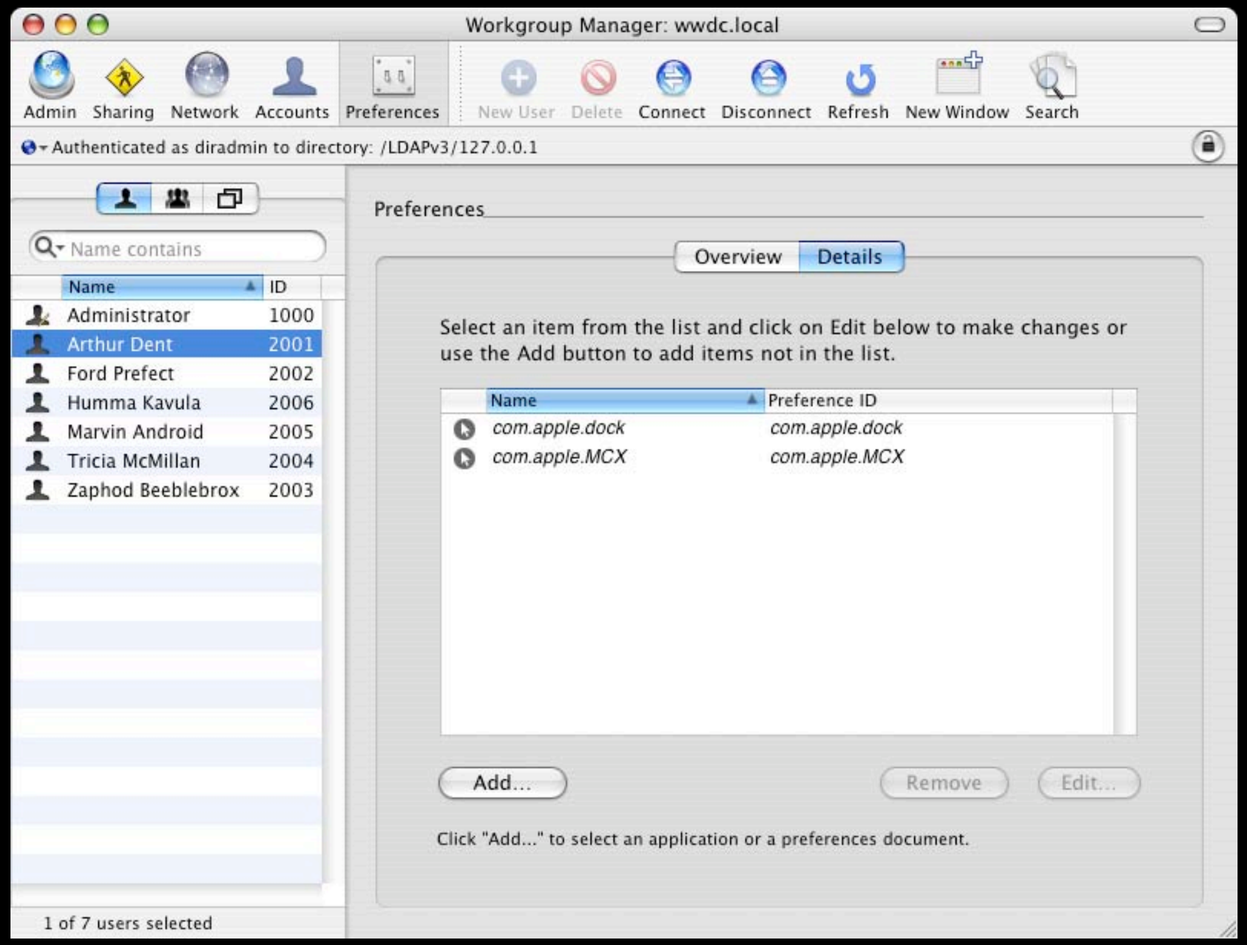
Preference Manifests

Workgroup Manager



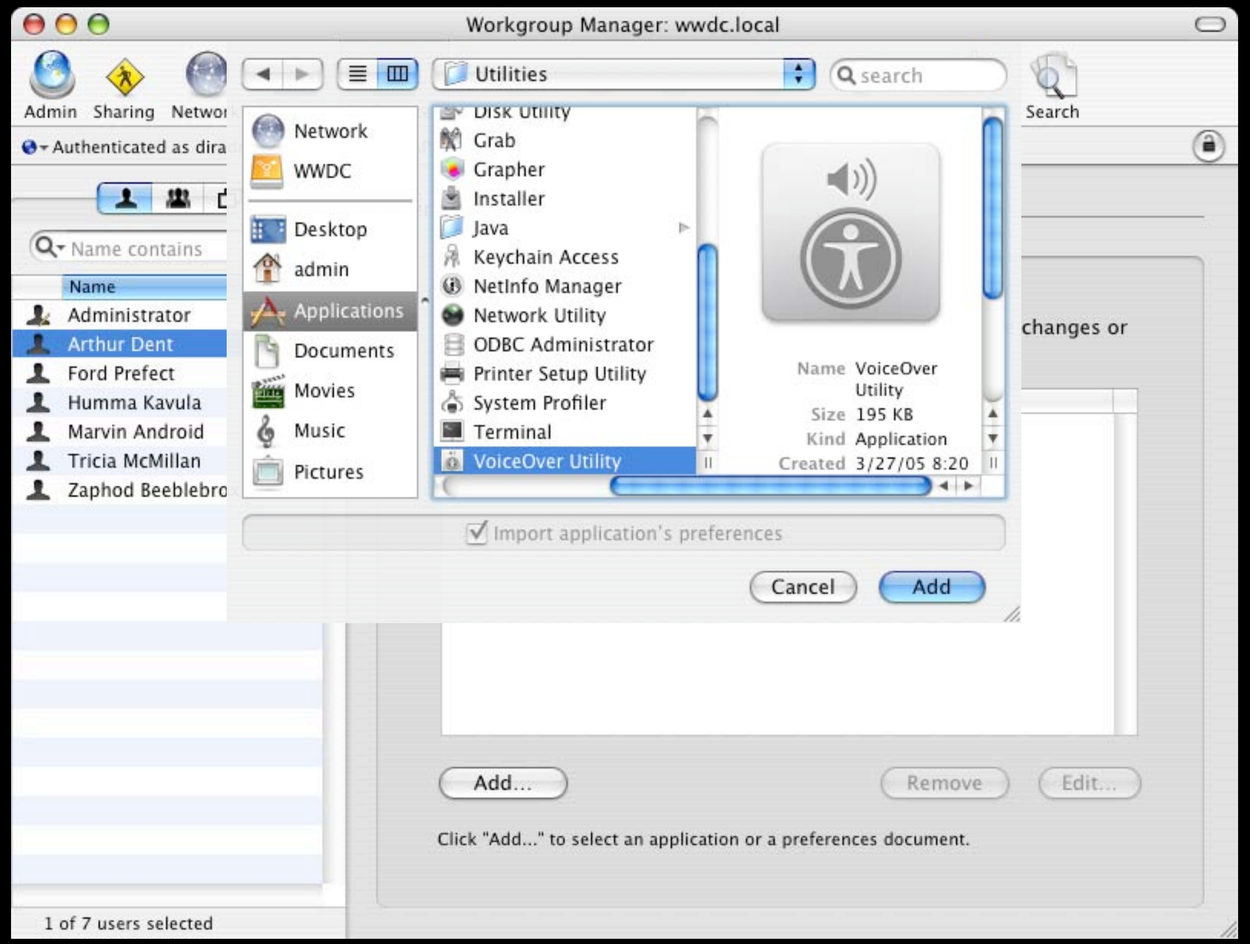
Preference Manifests

Workgroup Manager



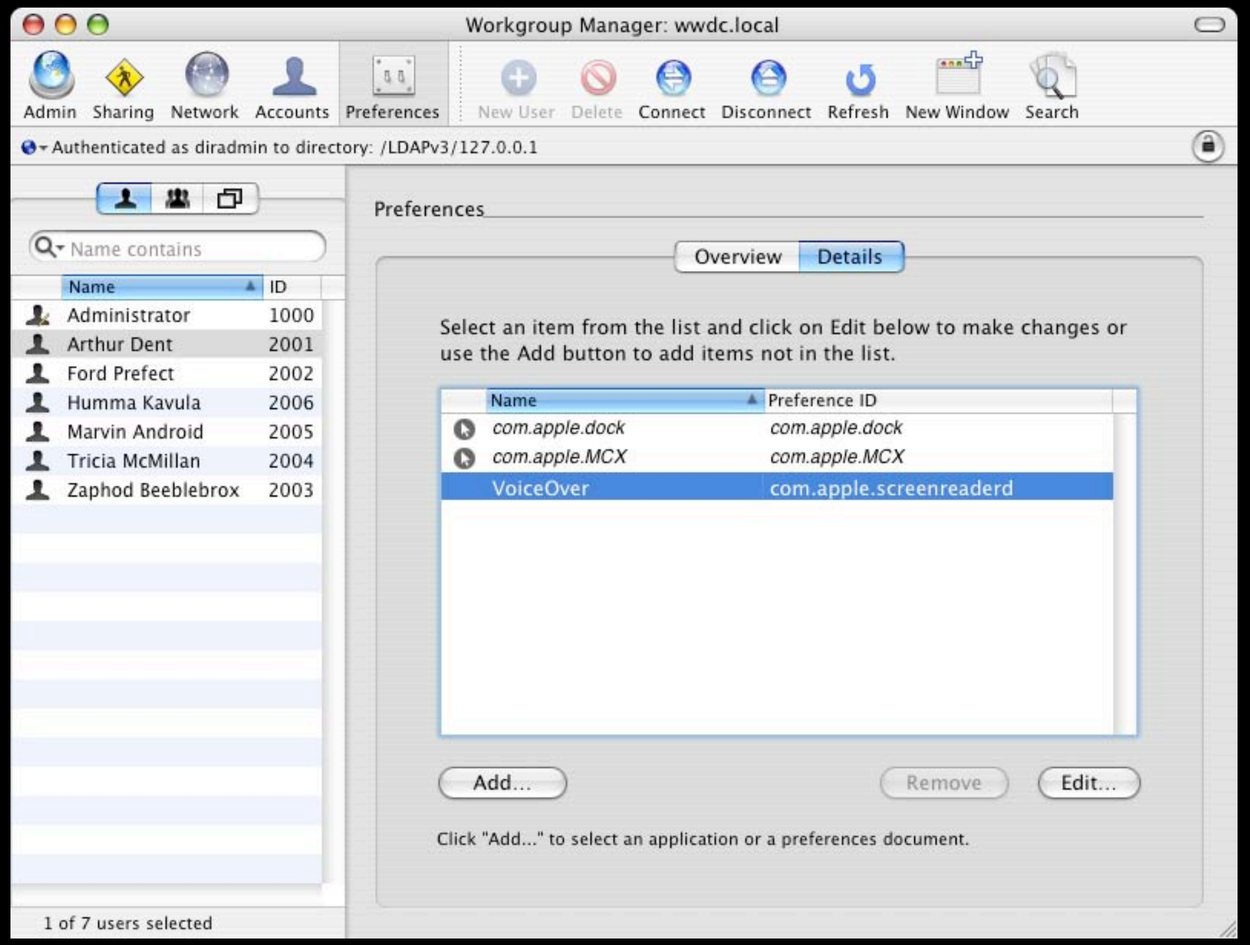
Preference Manifests

Workgroup Manager



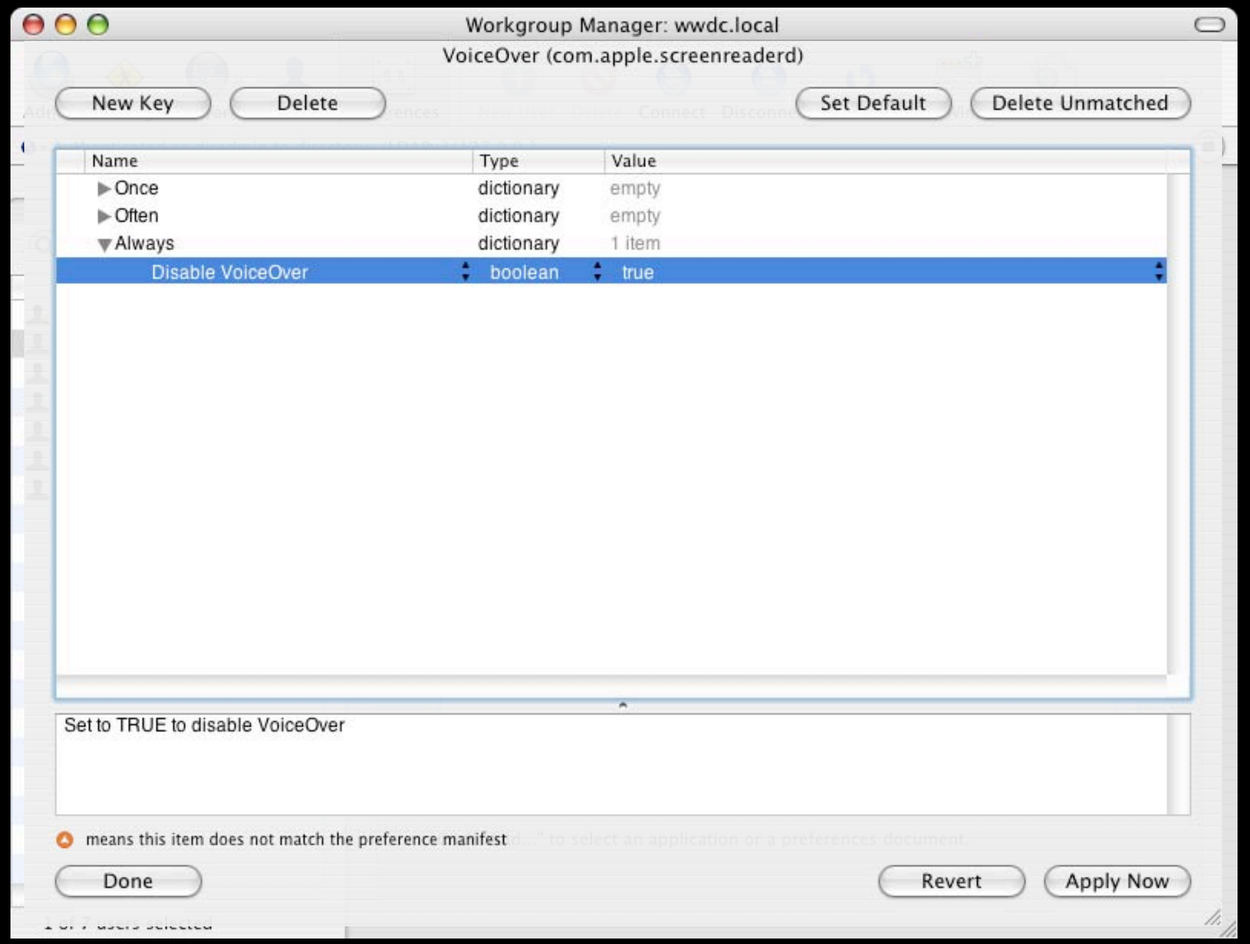
Preference Manifests

Workgroup Manager



Preference Manifests

Workgroup Manager



Preference Manifests

Under the hood

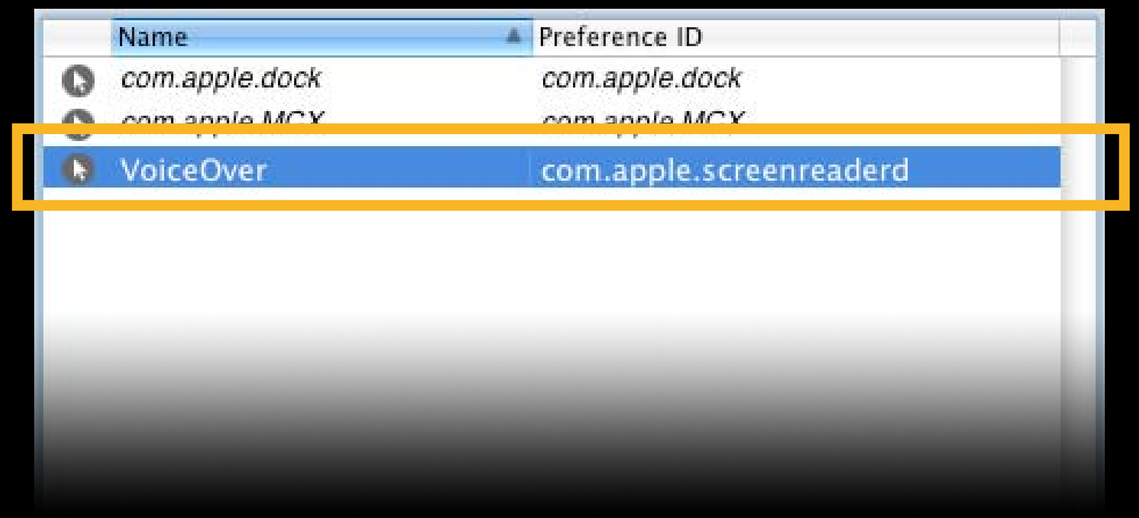
- com.apple.screenreaderd.manifest
  - Bundle inside application bundle
  - Localizable
    - Mac OS X Server languages: English, Japanese, French, German
  - Property list
  - Created by hand (Property List Editor, Xcode, BBEdit, vi, emacs,…)

Preference Manifests

```
<plist version="1.0">
<dict>

        <key>pfm_title</key>
        <string>VoiceOver</string>

        <key>pfm_domain</key>
        <string>com.apple.screenreaderd</string>
```

Preference Manifests

```
<plist version="1.0">
<dict>

        <key>pfm_title</key>
        <string>VoiceOver</string>

        <key>pfm_domain</key>
        <string>com.apple.screenreaderd</string>
```



Preference Manifests

```
<key>pfm_subkeys</key>
<array>
      <dict>

          <key>pfm_title</key>
          <string>Disable VoiceOver</string>

          <key>pfm_description</key>
          <string>Set to TRUE to disable VoiceOver</string>

          <key>pfm_name</key>
          <string>SCRStartupDisabled</string>

          <key>pfm_type</key>
          <string>boolean</string>
```

Preference Manifests

```
<key>pfm_title</key>
<string>Disable VoiceOver</string>

<key>pfm_description</key>
<string>Set to TRUE to disable VoiceOver</string>

<key>pfm_name</key>
<string>SCRStartupDisabled</string>

<key>pfm_type</key>
<string>boolean</string>
```

Name	Type	Value
▶ Once	dictionary	empty
▶ Often	dictionary	empty
▼ Always	dictionary	1 item
Disable VoiceOver	boolean	true

Set to TRUE to disable VoiceOver

Demo

Bruce Gaya
Engineering Lead, Managed Client X and Portable Home Directories

http://developer.apple.com/wwdc2005/

Wrapping Up

- Network volumes for applications and users
- Managed users
- Portable Home Directories
- Preference Manifests

More Information

http://developer.apple.com/wwdc2005/

Documentation, Sample Code, and Other Resources

http://developer.apple.com/wwdc2005/

Related Sessions

Swimming with Shark	Session 407 Friday 2:00PM
Real-World Desktop Management Practices	Session 644 Friday 5:00PM

Q&A

http://developer.apple.com/wwdc2005/

WWDC2005

Worldwide Developers Conference